Composites Science and Technology **37** (1990) 467–470

SUBJECT INDEX TO VOLUME 37

Acoustic emission (AE), 356, 362, 411
Ageing, effect on strength of interface, 178
Aligned short-fibre composites, 329
Alumina fibre, 149
Alumina fibre/glass matrix composites, 149
Alumina–silica fibres, 63
Amplitude distributions, 413, 421
Auger spectroscopy (AES), 187

Ballistic impact, 259
Boehmite–TEOS gels, 310
Brittleness, 130

Carbon coating of SiC fibre by CVD, 55
Carbon fibre composites, 411, 429
Carbon/carbon composites, 207
Carbon fibre/glass composites, 251
Carbon fibre/SiC composites, 111
Ceramic Microstructure, 7
CFRP, 411, 429
Chemical vapour infiltration (CVI), 38
Compliance calibration, 240
Crack distributions, 288
Crack growth mechanisms, 447
Crack growth rates, 292
Crack growth resistance curves (R curves), 192, 242
Crack length determination, 238
Crack nucleation and growth, 279, 286
Crack tip rotation (correction for), 440
Creep
  alumina–silica fibres, of, 70
  deformation, 285
  modelling, 329
Critical dynamic stress intensity factor, 269
Cross ply laminates (fatigue), 387
CVD carbon coatings
  alumina fibres, on, 151
  SiC fibre, on, 55
CVI (chemical vapour infiltration), 38
  process, 178
  zirconia, of, 79

Damage zone growth, 235
Dark field imaging, 25
Debonding, 131
  effect of coating, 56
  work, 360
Delamination, 429
Densification of zirconia matrix composites, 99
Differential thermal analysis (DTA), 301
Differential thermal expansion, 58
Double Cantilever beam tests (DCB), 432
Dynamic toughness, 267

Electrical properties of SiC fibre, 21
Electron microprobe analysis, 65
End-notch flexure tests (ENF), 433
Energy absorbing mechanisms, 353, 356
Energy release rate, 435
Energy toughness parameters, 207

Failure loci, mixed mode fracture, 458
Fatigue
  cross ply laminates, of, 387
  Kevlar/epoxy composites, of, 371

Composites Science and Technology **(37)** (1990)—© 1990 Elsevier Science Publishers Ltd, England. Printed in Great Britain

Fibre coatings
  carbon on alumina, 149
  carbon on SiC, 135
Fibre orientation estimation, image analysis, 395
Fibre pull-out, 360
  effect of coating, 56
Fibre size distribution, 119
Fibre stiffening in Kevlar fibre composites, 380
Fibre surface energy, 358
Fibre-reinforced glasses, interfacial shear stresses, 129
Fibre/matrix interface, 156, 177, 275
Fibrous texture, 271
Formulae of SiC fibres 50
Fourier transform methods, image analysis, 396
FP-fibre (Dupont alumina fibre), 63, 151
Fractography, 183
Fracture energy, 182
Fracture mechanics, 224, 435
Fracture mechanisms, 192

Gas flow rate (in CVI), 84
Gel permeation chromatography (GPC), 40, 46
Glass–ceramic composites (LAS), 253
Glass/polypropylene composites, 353
Grain size, alumina–silica fibres, 74
Grain structure of SiC fibres, 53

Heat treatment. 21, 47
Hot isostatically pressed composites (HIP), 167
Hot pressing of CMC, 313
Hybrid matrix, 275

Image analysis, 109, 393
Image filtering, 113
Impact behaviour, 249, 267
Infra-red spectroscopy (IR), 43, 49
Instrumented impact testing, 254
Interface characteristics, effect on toughness, 191
Interface frictional stress, 132, 142, 152, 159
Interfacial shear strength, 135
Interfacial shear stresses, 129
Interlaminar fracture toughness, 434

Kevlar/epoxy compositions, 371
Kinetic studies of densification, 104

LAS glass–ceramic composites, 253
Linear elastic behaviour, 209
Linear elastic fracture mechanics (LEFM), 250, 435
Linear non-elastic behaviour, 210
Lithium aluminosilicate CMC, 253

Macroporosity, 117
Matrix deformation, 359
Matrix cracking, 259, 423
Matrix surface energy, 359
Mean contact number, 120
Mechanical behaviour
  CMC, 153, 228
  SiC/SiC composites, 177
Mechanical properties
  fibres, 64
  SiC fibres, 45
Mechanical property stability of coated SiC fibres, 55
Mercury porosimetry, 87
Microcracking, 276
Microcrystalline β-SiC, 55
Microcrystallinity, alumina–silica fibres, 74
Microindentation technique, 152
Microporosity, 118
Microprobe analysis, 185, 238
Microstructure, 191
  silicon carbo-nitride, 15
  zirconia matrix composites, 99
Microtexture of SiC fibre precursor, 21
Mineralization, 17
Mixed mode fracture tests, 434, 444, 456
Modelling behaviour of Kevlar/epoxy composites, 371
Modulus reduction, 373, 389
Molecular chain unkinking, 380
Molecular weight distribution, 15

Morphological characterization by image analysis, 109
Mullite, 299
  fibres, 64
Multidirectional composites, 197

Nextel fibre/SiO_2 composites, 112
Nicalon fibre (SiC), 55
Non-elastic non-linear behaviour, 213
Non-linear elastic behaviour, 211
Notched impact toughness, 366
Nucleation and growth of cracks, 279, 286

Optical diffraction methods, image analysis, 395
Oxidation effects
  interface, on, 185
  SiC, of, 283

Ply stiffening, 374
Poly(ether sulphone) (PES) matrix composites, 429
Polycarbosilanes, 22, 37, 40
Polycondensation, 8
Polycondensation-aggregate, 17
Polysilazanes (pyrolysis), 7
Pore networks, infiltration by CVI, 79
Power law creep, 330
Preceramic polymers, 7
Precursors
  architecture, 7
  polymer, 21
  Si–Cl bonds, with, 48
  SiC, 37
Prediction of mechanical properties (SMC), 402
Preforms, 81, 167
Processing CMC, microstructure tailoring, 299
Property–structure characterization (Al_2O_3/SiO_2 fibres), 63
Pull-out, 130, 360
Pyrolysis, 7, 12
  polycarbosilane, of, 42
  yield, 42

R curves, crack growth resistance, 192, 208, 242, 269
Radial distribution function, 120
Random (short) fibre composites, 195
Rate dependence, of interfacial properties, 143
Reaction-bonded silicon nitride (RBSN), 56
Residual stresses, 140
Rupture mechanisms, 421

Scanning electron microscopy, 301
Segmentation, image analysis, 115
Sheet moulding compounds (SMC), 393, 402
Short fibre composites, 195, 329, 353, 393
SiC fibres, 21, 37, 45, 133
  synthesis, 39
SiC whisker/alumina composites, 279, 330
SiC whisker/silicon nitride, 328
SiC whiskers, 279
SiC/mullite composites, 111, 197
SiC/SiC composites, 38, 111, 177, 225
Silicon carbo-nitride, 15
Silicon nitride matrix composites, 165
Small angle diffraction (SAD), 25
  alumina–silica fibres, of, 72
Small angle X-ray scattering (SAXS), 10
Sol–gel processing of CMC, 300
Steady state creep, 313
Strain-state effects, 375
Structure of polysilazanes, 8
Synthesis
  polysilazanes, 8
  polycarbosilane, 38

Tailoring microstructures through processing, 299
Temperature, effect on impact behaviour, 256
Temperature dependence, 375
  fibre properties, of, 69
Thermal expansion, alumina/glass composites, 156
Thermal mismatch, 140, 172
Thermal stability, SiC fibres, 37
Thermoelastic properties, 393

Toughness, 191, 202, 223
Transmission electron microscopy, 65
Transverse ply cracking, 372, 389
Transverse ply strength, 376
Turbostratic structure, 22, 30, 31
Tyranno fibres (SiC), 55

Weibull modulus, SiC fibres, 57
Weibull statistics, alumina–silica fibres, 66
Wide-angle X-ray analysis, 65
Work
  matrix plastic deformation, of, 359
  rupture, of, 356

Yield from pyrolysis of polycarbosilane, 42

Zirconia, infiltration into fibrous preforms, 83

AUTHOR INDEX TO VOLUME 37

Abbé, F., 109
Ashby, M. F., 371
Aubin, C., 63
Beaumont, P. W. R., 371
Berthelot, J. M., 411
Birbis, J. M., 223
Bouillon, E., 21
Bouquet, M., 223
Boussuge, M., 177
Bunsell, A. R., 63
Carlsson, R., 165
Chermant, L., 109
Chermant, J. L., 109
Chevacharoenkul, S., 313
Chou, T.-W., 329
Coster, M., 109
Dauger, A., 7
Davis, R. F., 313
Doughan, C. A., 149
Faber, K. T., 129
Fantozzi, G., 191, 207
Fischbach, D. B., 55
Frey, N., 177
Ganczakowski, H. L., 371
Goel, M., 353
Goettler, R. W., 129
Gomina, M., 109
Goursat, P., 7, 165
Gupta, V. B., 353
Hasegawa, Y., 37
Hashemi, S., 429
Jakus, K., 279
Kim, J., 329
Kinloch, A. J., 429
Koester, D. A., 313
Lamicq, P., 207
Langlais, F., 79
Lecomte, A., 7
Lee, R. J., 249
Lehman, R. L., 149
Lemoine, P. M., 55
Lequertier, J. M., 191
Lesniewski, Ch., 63
Lundberg, R., 165
Macke, T., 267
Minet, J., 79
Mittal, R. K., 353
Monthioux, M., 21
Nair, S. V., 279
Naslain, R., 1, 79, 267
Neuilly, D., 267
Nixon, R. D., 313
Oberlin, A., 21
Osmani, H., 191
Pachalis, J. R., 329
Park, N., 249
Phillips, D. C., 249
Pompe, R., 165
Quenisset, J. M., 223, 267
R'Mili, M., 207
Rhazi, J., 411
Rocher, J. P., 267
Rouby, D., 191, 207
Scott, P. D., 393
Sirieix, F., 7
Smith, P. A., 371
Sonuparlak, B., 299
Wetherhold, R. C., 393
Williams, J. G., 429

Composites Science and Technology (37) (1990)—© 1990 Elsevier Science Publishers Ltd, England. Printed in Great Britain